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## Discolored soybean seeds

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# Discolored soybean seeds

## **Abstract**

When growers start to combine, pathologists start to receive questions about discolored soybean seeds. For the last two years, we have received numerous reports of discolored seeds from producers, especially in southwestern and western Iowa. Areas where this problem was prevalent last year appear to have the problem again this year. Growers are concerned about the effect of discoloration on seed quality. A few common diseases that are causing seed discoloration this season are discussed in the following paragraphs.

## **Keywords**

Plant Pathology

## **Disciplines**

Agricultural Science | Agriculture | Plant Pathology

# INTEGRATED CROP MANAGEMENT

## Discolored soybean seeds

When growers start to combine, pathologists start to receive questions about discolored soybean seeds. For the last two years, we have received numerous reports of discolored seeds from producers, especially in southwestern and western Iowa. Areas where this problem was prevalent last year appear to have the problem again this year. Growers are concerned about the effect of discoloration on seed quality. A few common diseases that are causing seed discoloration this season are discussed in the following paragraphs.

**Soybean mosaic virus (SMV)** and **bean pod mottle virus (BPMV)** are two viral diseases that are causing seed discoloration this year. SMV is spread by aphids and BPMV may be spread by bean leaf beetles. The populations of these insects are large this year because of the mild winter.



[1] **Seed discoloration from soybean mosaic virus.**

Seed infected with SMV may have a black discoloration from the hilum. This discoloration, however, should not be considered as a reliable indicator of SMV because other stresses can cause such mottling. For some varieties, SMV infection may cause mild discoloration that is not detectable without training. Seed testing is necessary to determine infection if SMV is suspected. BPMV-infected seeds have less characteristic symptoms than SMV-infected seeds.

We also are receiving questions about seed problems in later-maturing soybean plants in mature soybean fields. Infected plants have green, thick stems with mature pods and their seeds are deformed or discolored, often brown. Infected plants are scattered throughout the field. The cause of later-maturing symptoms is unknown. Be aware that male sterilized plants also stay green late into the season and can be misidentified as virus-infected plants. These plants have very few pods.

Cercospora leaf blight, caused by *Cercospora kikuchii*, was prevalent this growing season. Although this disease is not yield limiting in Iowa, severely infected plants have **purple seed stain**. Infected seeds have a pink to purple discoloration on the seed coats. The pathogen is seedborne and also survives in crop residues.



[2] **Purple seed stain (caused by *Cercospora kikuchii*).**

Damage from bean leaf beetle also causes seed discoloration. This summer, large populations of bean leaf beetles caused damage in some soybean fields. Insect wounds on pods are recognized by the bite marks and are often associated with discolored seeds, which can be mistaken as a disease problem. Some fungi can infect beetle-damaged seeds by entering through the wounds and thereby reduce the germination rate.

Top die back (also called tip blight) caused by *Phomopsis* and *Diaporthe* species was less extensive this year compared with last year. Typical plant symptoms were a light yellowing of the top leaves followed by death of tissues from the top down. Seeds infected with either of these two fungi are not discolored but may be cracked and shriveled and usually have a low germination rate. If these seeds are planted, they may result in low emergence or seedling disease. Less severely diseased seedlings have black spots on the cotyledons, as reported early this spring.

The use of pathogen-infested seeds can increase the spread of a seedborne disease. Growers who want to save soybean seeds for next season are advised to check seed quality before they use them. For accurate disease identification, seed testing is needed. The ISU Seed Science Center [3] provides seed testing for a reasonable fee. For more information on seed testing, call 515-294-6821.

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